

IN THE CLAIMS

Pursuant to 37 CFR §121(c), the claim listing, including the text of the claims, will serve to replace all prior versions of the claims, in the application.

Please amend claims 1, 3, 5, 7, 14, 15, 20 and 24-26 and cancel claim 23 as follows:

1. (Currently Amended) An access point device, comprising:

a wireless transmission and reception unit for transmitting information of the access point ~~which~~ where the wireless transmission and reception unit ~~locates~~ is located at or receiving information of peripheral access point devices wirelessly;

a control unit for searching channel numbers used by the peripheral access point devices from the information from the wireless transmission and reception unit, deciding an optimal channel number from the channel numbers except for the used channel numbers, and setting the optimal channel number as a channel number;

the control unit, when searching channel numbers used by the peripheral access point devices, transmitting a probe request frame to the peripheral access point devices, receiving probe response frames from the peripheral access point devices for a predetermined time, extracting the channel numbers from the received probe response frames, and ~~stores~~ storing the extracted channel numbers; and

an operator terminal for managing and controlling the control unit.

Claim 2 (Canceled)

1 3. (Currently Amended) The device according to claim 1, wherein the control unit
2 transmits the probe request frame after setting a basic service set identifiers field of the
3 probe request frame as broadcast basic service set identifiers .

1 4. (Previously Presented) The device according to claim 1, wherein the control
2 unit extracts the channel numbers from direct sequence parameter sets of frame bodies of
3 the probe response frames.

1 5. (Currently Amended) An access point device, comprising:
2 a wireless transmission and reception unit transmitting information of the access
3 point ~~which~~ where the wireless transmission and reception unit ~~locates~~ is located at or
4 receiving information of peripheral access point devices wirelessly;

5 a control unit searching channel numbers used by the peripheral access point
6 devices from the information from the wireless transmission and reception unit, deciding
7 an optimal channel number from among the channel numbers except for the used channel
8 numbers, and setting the optimal channel number as a designated channel number;

9 the control unit, when searching channel numbers used by the peripheral access
10 point devices, receiving beacon frames from the peripheral access point devices for a
11 predetermined time, extracting the channel numbers from the beacon frames, and storing

12 the extracted channel numbers; and

13 an operator terminal managing and controlling the control unit.

1 6. (Original) The device according to claim 5, wherein the control unit extracts
2 the channel numbers from direct sequence parameter sets of frame bodies of the beacon
3 frames.

1 7. (Currently Amended) An access point device, comprising:
2 a wireless transmission and reception unit transmitting information of the access
3 point ~~which~~ where the wireless transmission and reception unit ~~locates~~ is located at or
4 receiving information of peripheral access point devices wirelessly;

5 a control unit searching channel numbers used by the peripheral access point
6 devices from the information from the wireless transmission and reception unit, deciding
7 an optimal channel number from among the channel numbers except for the used channel
8 numbers, and setting the optimal channel number as a channel number;

9 the control unit, when searching channel numbers used by the peripheral access
10 point devices, receiving beacon frames from the peripheral access point devices for a
11 predetermined time, extracting the channel numbers from the beacon frames, and storing
12 the extracted channel numbers;

13 the control unit, when determining the optimal channel number, selecting one of
14 the channel numbers except for the used channel numbers, deciding whether the channel

15 numbers obtained by subtracting '1' and '2' from the selected channel number and the
16 channel numbers obtained by adding '1' and '2' to the selected channel number have been
17 used, and setting the selected channel number as the optimal channel number when the
18 channel numbers have not been used; and

19 an operator terminal managing and controlling the control unit.

1 8. (Previously Presented) A method for setting a channel of an access point
2 device, comprising:

3 a peripheral search step for receiving information from peripheral access point
4 devices, and searching channel numbers used by the peripheral access point devices;

5 the peripheral search step comprising the steps of a probe request frame
6 transmission step transmitting a probe request frame to the peripheral access point
7 devices, a probe response frame reception step receiving probe response frames from the
8 peripheral access point devices for a predetermined time, and a channel number
9 extraction step extracting channel numbers from the received probe response frames and
10 storing the extracted channel numbers;

11 an optimal channel number decision step for selecting one of the channel numbers
12 except for the used channel numbers, and deciding whether the selected channel number
13 is an optimal channel number; and

14 a channel setting step for setting the selected channel number as a channel number
15 when the selected channel number is the optimal channel number.

Claim 9 (Canceled)

1 10. (Previously Presented) The method according to claim 8, wherein the probe
2 request frame transmission step transmits the probe request frame after setting basic
3 service set identifiers field of the probe request frame as broadcast basic service set
4 identifiers .

1 11. (Previously Presented) The method according to claim 8, wherein the channel
2 number extraction step extracts the channel numbers from direct sequence parameter sets
3 of frame bodies of the probe response frames.

1 12. (Previously Presented) A method for setting a channel of an access point
2 device, comprising:

3 a peripheral search step receiving information from peripheral access point
4 devices, and searching channel numbers used by the peripheral access point devices;

5 the peripheral search step comprising the steps of a beacon frame reception step
6 receiving beacon frames transmitted from the peripheral access point devices for a
7 predetermined time, and a channel number extraction step extracting the channel numbers
8 from the beacon frames and storing the extracted channel numbers;

9 an optimal channel number decision step selecting one of the channel numbers

except for the used channel numbers, and deciding whether the selected channel number is an optimal channel number; and

a channel setting step setting the selected channel number as a channel number when the selected channel number is the optimal channel number.

13. (Original) The method according to claim 12, wherein the beacon frame reception step extracts the channel numbers from direct sequence parameter sets of frame bodies of the beacon frames.

14. (Currently Amended) A method for setting a channel of an access point device, comprising:

a peripheral search step receiving information from peripheral access point devices, and searching channel numbers used by the peripheral access point devices;

the peripheral search step comprising the steps of a probe request frame transmission step transmitting a probe request frame to the peripheral access point devices, a probe response frame reception step receiving probe response frames from the peripheral access point devices for a predetermined time, and a channel number extraction step extracting channel numbers from the received probe response frames and storing the extracted channel numbers;

an optimal channel number decision step selecting one of the channel numbers except for the used channel numbers, and deciding whether the selected channel number

is an optimal channel number;

the optimal channel number decision step comprising selecting one of the channel numbers except for the used channel numbers, and deciding whether the channel numbers obtained by subtracting 1 and 2 from the selected channel number and the channel numbers obtained by adding 1 and 2 to the selected channel number have been used; and
a channel setting step setting the selected channel number as a designated channel number when the selected channel number is the optimal channel number.

15. (Currently Amended) An apparatus, comprising:

a first unit transmitting information of the access point ~~which~~ where the first unit ~~locates~~ is located at or receiving information of peripheral access point devices wirelessly;

a second unit searching channel numbers used by the peripheral access point devices from the information from the first unit, deciding an optimal channel number from the channel numbers except for the used channel numbers, and setting the optimal channel number as a channel number, when searching the channel numbers, the second unit transmitting a probe request frame to the peripheral access point devices, receiving probe response frames from the peripheral access point devices for a predetermined time, and extracting the channel numbers from the received probe response frames; and

a third unit managing and controlling the second unit.

1 16. (Original) The apparatus according to claim 15, wherein the second unit
2 stores the extracted channel numbers.

1 17. (Original) The apparatus according to claim 16, wherein the second unit
2 transmits the probe request frame after setting basic service set identifiers field of the
3 probe request frame as broadcast basic service set identifiers .

1 18. (Original) The apparatus according to claim 17, wherein the second unit
2 extracts the channel numbers from direct sequence parameter sets of frame bodies of the
3 probe response frames.

1 19. (Original) The apparatus according to claim 18, wherein, when determining
2 the optimal channel number, the second unit selects one of the channel numbers except
3 for the used channel numbers, decides whether the channel numbers obtained by
4 subtracting a first number and a second number from the selected channel number and the
5 channel numbers obtained by adding the first number and the second number to the
6 selected channel number that have been used, and sets the selected channel number as the
7 optimal channel number when the channel numbers have not been used.

1 20. (Currently Amended) An apparatus, comprising:
2 a first unit transmitting information of the access point ~~which~~ where the first unit

3 ~~locates~~ is located at or receiving information of peripheral access point devices
4 wirelessly;

5 a second unit searching channel numbers used by the peripheral access point
6 devices received from the first unit, the second unit receiving beacon frames from the
7 peripheral access point devices for a predetermined time and extracting the channel
8 numbers from the beacon frames and storing the extracted channel numbers when
9 searching the channel numbers ~~when searching the channel numbers~~;

10 the second unit deciding an optimal channel number from the channel numbers
11 except for the used channel numbers, and setting the optimal channel number as a channel
12 number; and

13 a third unit managing and controlling the second unit.

1 21. (Original) The apparatus according to claim 20, wherein the second unit
2 extracts the channel numbers from direct sequence parameter sets of frame bodies of the
3 beacon frames.

1 22. (Original) The apparatus according to claim 21, wherein, when determining
2 the optimal channel number, the second unit selects one of the channel numbers except
3 for the used channel numbers, decides whether the channel numbers obtained by
4 subtracting a first number and a second number from the selected channel number and the
5 channel numbers obtained by adding the first number and the second number to the

selected channel number have that been used, and sets the selected channel number as the optimal channel number when the channel numbers have not been used.

23. (Cancelled)

24. (Currently Amended) The computer-readable medium ~~having~~ encoded with computer-executable instructions for performing a method ~~of claim 23, wherein,~~ composed of:

transmitting a probe request frame after setting a basic service set identifiers field of the probe request frame as broadcast basic service set identifiers;

[[the]] receiving of information probe response frames from peripheral access point devices for a predetermined time, and searching channel numbers used by the peripheral access point devices; further comprises:

~~transmitting a probe request frame to the peripheral access point devices, transmitting the probe request frame after setting basic service set identifiers field of the probe request frame as broadcast basic service set identifiers; receiving probe response frames from the peripheral access point devices for a predetermined time; and~~

extracting channel numbers from the received probe response frames, and storing the extracted channel numbers[[,]];

extracting the channel numbers from direct sequence parameter sets of frame bodies of the probe response frames[[.]];

17 selecting one of the channel numbers except for the used channel numbers, and
18 deciding whether the selected channel number is an optimal channel number; and
19 setting the selected channel number as a channel number when the selected
20 channel number is the optimal channel number.

21 25. (Currently Amended) The computer-readable medium ~~having~~ encoded with
22 computer-executable instructions for performing a method ~~of claim 23, wherein the~~
23 ~~receiving of information from peripheral access point devices, and searching channel~~
24 ~~numbers used by the peripheral access point devices further comprises:~~ composed of:

25 transmitting a probe request frame to the peripheral access point devices;

26 receiving beacon frames transmitted from the peripheral access point devices for a
27 predetermined time, searching channel numbers used by the peripheral access point
28 devices, and extracting [[the]] channel numbers from direct sequence parameter sets of
29 frame bodies of the beacon frames; [[and]]

30 ~~a channel number extraction step for extracting the channel numbers from the~~
31 beacon frames, and storing the extracted channel numbers[[.]];

32 selecting one of the channel numbers except for the used channel numbers, and
33 deciding whether the selected channel number is an optimal channel number; and

34 setting the selected channel number as a channel number when the selected
35 channel number is the optimal channel number.

1 26. (Currently Amended) The computer-readable medium ~~having~~ encoded with
2 computer-executable instructions for performing a method ~~of claim 23, wherein the~~
3 ~~selecting of one of the channel numbers except for the used channel numbers, and~~
4 ~~deciding whether the selected channel number is the optimal channel number further~~
5 ~~comprises:~~ composed of:

6 transmitting a probe request frame to the peripheral access point devices;

7 receiving information from peripheral access point devices, and searching channel
8 numbers used by the peripheral access point devices;

9 extracting channel numbers from the received probe response frames;

10 selecting one of the channel numbers except for the used channel numbers; [[and]]

11 deciding whether the channel numbers obtained by subtracting [[1]] one and [[2]]
12 two from the selected channel number and the channel numbers obtained by adding [[1]]
13 one and [[2]] two to the selected channel number have been used[.]; and

14 setting the selected channel number as a channel number when the selected
15 channel number is the optimal channel number.